

IN THE CLAIMS

A marked-up version of the claims showing the claim amendments is attached hereto as Exhibit B. Matter that has been deleted from the claims is indicated by brackets and matter that has been added to the claims is indicated by underlining.

Please amend the claims as follows:

35- Sub 4
1. (Amended) A method of treating an atherosclerotic target region of a coronary vessel in a patient, comprising
delivering to the patient a photoatherolytic compound to cause accumulation of the compound in the target region,
accessing the target region intraluminally with a guidewire,
advancing over the guidewire a catheter having (i) a proximal main-body sleeve, (ii) a flexible, non-inflatable, translucent distal-end sleeve joined to the main-body sleeve at a catheter juncture, and (iii) an inner lumen extending through the two sleeves, said advancing being effective to position to the catheter's distal-sleeve within the target region,
removing the guidewire from the catheter,
introducing through the catheter a fiber-optic bundle having a light-diffusing tip, until said tip is positioned adjacent the catheter juncture,
injecting a light-transmissive fluid through the catheter into the catheter's distal-end sleeve, and
irradiating the atherosclerotic vessel region by passing a laser light beam through the fiber optic bundle,
wherein said beam is distributed along the catheter's distal-end sleeve, for transmission through the sleeve, by light scattering produced by (i) the light-diffusing tip, (ii) the light-transmissive fluid in the catheter's distal-end sleeve and (iii) the distal sleeve, and the scattered light transmitted through the sleeve is effective to photoactivate the photoatherolytic compound contained in the target region.

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6. (Amended) Apparatus for use in treating an atherosclerotic target region of a coronary vessel in a patient, comprising
a guidewire for accessing the target region intraluminally,
a catheter having (i) a proximal main-body sleeve, (ii) a flexible, non-inflatable, translucent distal-end sleeve joined to the main-body sleeve at a catheter juncture, and (iii) an inner lumen extending through the two sleeves, through which lumen the catheter can be advanced over the guidewire, with such positioned in the target region, to place the catheter's distal-end sleeve within the target region,

26 a fiber-optic bundle having a light-diffusing tip, said bundle being adapted to be introduced through the catheter lumen, with the catheter's distal-end sleeve placed within the target site,

a proximal-end catheter port through which a light-transmissive fluid can be injected through the catheter into the catheter's distal-end sleeve, and

a proximal-end optical connector through which the fiber-optic bundle can be connected to a laser source, for irradiating the atherosclerotic vessel region by passing a laser light beam through the fiber optic bundle,

such that the laser beam is distributed along the catheter's distal-end sleeve, for transmission through the sleeve, by light scattering produced by (i) the light-diffusing tip, (ii) the light-transmissive fluid injected into the catheter's distal-end sleeve and (iii) the distal sleeve, and where the scattered light transmitted through the sleeve is effective to photoactivate the photoatherolytic compound contained in the vessel region.
